

## ABSTRACT

Methods and apparatus for enabling a high performance reticle stage to be used to scan within an electron beam projection lithography system are disclosed.

- 5 According to one aspect of the present invention, a scanning apparatus that is suitable for use in an electron beam projection system includes a first guide beam and a translational structure. The first guide beam includes a first vacuum chamber and a second vacuum chamber which are in fluid communication with a first airbearing structure that is a part of the translational structure. The translational structure is
- 10 generally arranged to move linearly with respect to the first guide beam, which is at least partially disposed within the translational structure. In one embodiment, the first guide beam includes four contact sides, and the first airbearing structure includes air pads arranged to substantially contact each of the four contact sides.

FIG. 10